



Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade 7 Summer Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Summer Zone
			K	U	A		Timeline
		Students will be able to:					
1.Rational Number	<ol style="list-style-type: none"> 1. Place Value and the decimal Number system 2. Rounding to the nearest whole number and a specific of number of decimal places. 3. Integers, Rational Numbers 4. Representing Rational numbers on Number line 5. Operations on Rational Numbers 6. Order of Operations. 	1.Use the concept of place value for whole number, integer, rational number and decimal numbers			✓	2	February 6-7
		2.Round off whole numbers, integers, rational numbers and decimal number to a required number of accuracy, significance or decimal places			✓	2	February 9-10
		3.Recognize Integer	✓			1	February 11
		4.Identify and represent rational number on number line		✓		2	February 12-13
		5.Verify commutative and associative properties of rational numbers			✓	1	February 14
		6.Solve real word problem involving operations on rational numbers			✓	2	February 16-17
		7.Arrange rational number in ascending or descending order			✓	2	February 18-19



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			K	U	A		Timeline
		Students will be able to:					
2.Square and Square Roots	1. Even number, Odd Numbers, 2. Composite Numbers 3. Perfect Square (Square of a Natural Number, proper fraction) 4. Square Root of a Natural Numbers and	Students will be able to: 1.Recognize prime and composite number		✓		2	February 20-21
		2.Find the square of a number up to three digits		✓		2	February 23-24
	common fractions 5. Square Root by factorization 6. Square Root of Decimal Fractions by factorization	3.Find the square of a proper fractions and decimal. 4.Find the square root of natural , common fractions and decimal fractions by factorization 5.Solve word problems on square toot		✓		2	February 25-26
3.Ratio, Rate, and Proportion	1. Ratio 2. Ratio of three quantities 3. Increase and decrease ratio 4. Rate and Average Rate	Students will be able to:					
		1.Calculate increase and decrease in ration based on change in quantities and vice versa			✓	3	March 5-7



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			K	U	A		Timeline
		Students will be able to:					
	5. Proportion 6. Direct Proportion 7. Unitary Method 8. Inverse Proportion 9. Distance, Time and Speed 10. Conversion of units of distance time and speed 11. Time	2. Calculate rate and average rate of quantities			✓	3	March 9-12
		3. Calculate direct and inverse proportion		✓		3	March 13-14, 16
		4. Solve word problem related to real life situations involving direct, inverse proportion, distance, time and average speed			✓	4	March 17-20
4. Financial Arithmetic	1. Profit and loss 2. Importance of Profit and loss percentage 3. Discount 4. Property tax 5. General Sales Tax 6. Commission 7. Value Added Tax (VAT) 8. Zakat 9. Nisab of Zakat 10. Rate of Zakat	1. Know about selling price, cost price, profit, loss, discount, profit percentage and loss percentage	✓			4	March 24-27
		2. Calculate property tax, general sales tax, commission and value added tax (VAT)		✓		3	March 28,30-31
		3. Solve real life problems involving profit and loss percentage, zakat, Ushr, and commission			✓	3	April 1-3
		4. Calculate Ushr and solve real life problem involving Ushr			✓	3	April 4, 6-7



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			K	U	A		Timeline
		Students will be able to:					
	11. Ushr 12. Rate of Ushr 13. Income Tax	5. Calculate Income tax and solve real life problem involving Income tax			✓	3	April 8-10
5.Sets	1. Set and its Notation	1. Use language, notation and Venn Diagram to represent sets and their	✓			2	April 11, 13
	2. Set notation to list the Elements of a Set 3. Types of Sets 4. Subset and Superset	elements (Natural numbers, whole numbers, integers, even numbers, odd numbers, prime numbers)	✓			2	April 14-15
	5. Proper and improper sets 6. Equal and Equivalent sets 7. Joint and overlapping sets 8. Operations on sets 9. Union and Intersection	2. Identify and differentiate between <ul style="list-style-type: none"> • Subset and superset • proper and improper • equal and equivalent • disjoint and overlapping 	✓			2	April 16-17
	10. Difference of two sets 11. Complement of a set	3. Describe and perform operations on sets (Union, intersection, difference and complement)		✓		2	April 18,20
6.Algebra	1. Algebraic Expression	Student will able to learn about					



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			K	U	A		Timeline
		Students will be able to:					
	<ol style="list-style-type: none"> 2. Terms of Algebraic Expression 3. Addition and subtraction of two or more polynomial 4. Multiplication of polynomials 5. Algebraic Identities 6. Factorization 7. Number pattern and sequences 8. Number Tables and Finding Rules 	1. Algebraic Expression	✓			2	April 21-22
		2. Polynomial and its types	✓			2	April 23-24
		3. Operation on polynomials (Addition, Subtraction, and Multiplication)		✓		4	April 25,27-29
		4. Algebraic Identities $(x+ a) (x +b) = x^2 + (a+b) +ab$ $(a+b)^2 = a^2 +2ab+b^2$ $(a-b)^2 = a^2 + -2ab +b^2$ $(a+b) (a-b) = a^2-b^2$			✓	4	April 30, May 2,4-5
		5. Factorization of algebraic expression using algebraic identities and making group			✓	4	May 6-9
7.Transformation	<ol style="list-style-type: none"> 1. Cartesian plane 2. Translation 	Student will able to					
		1. Understand and use Cartesian coordinates system	✓			2	May 11-12



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			K	U	A		Timeline
		Students will be able to:					
	<ol style="list-style-type: none"> 3. Reflection and line of Symmetry 4. Rotation and Rotational symmetry 	2. Use ordered pairs to points on coordinate plane		✓		2	May 13-14
		3. Identify coordinates of vertices of 2-D shapes		✓		2	May 15-16
		4. Translate points and 2-D shapes on coordinate plan			✓	3	May 18-20
8.Linear Equations	<ol style="list-style-type: none"> 1. Algebraic Equation 2. Linear Equation in one Variable 3. Solution of Linear Equation 4. Literal Equation 5. linear Equations in Two Variables 	Student will able to					
		1. Recall the solution of linear equations in one variable	✓			1	May 21
		2. Form a linear equation in two variable		✓		1	May 22
		3. Solve simultaneous linear equation using elimination and substitution methods			✓	2	May 23,25
		4. Plot graphs of a linear equation in two variables			✓	2	May 26, 30



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			K	U	A		Timeline
		Students will be able to:					
	6. General Form of Linear Equation in Two variables	5. Recognize and state equation of horizontal and vertical lines			✓	1	June 1
	7. Graphing a linear Equation	6. Find the value of x and y from the graph				2	June 2-3
	8. Graph of an equation of the Form $y = mx$ (where m is slope of line)			✓			
	9. Solving System of Linear Equation						
	10. Elimination Method 11. Substitution Method						
9. Geometry	1. Polygon	Student will be able to					
	2. Sum of measures of Interior Angles of a Polygon	1. Calculate the interior and exterior angles of a polygon			✓	2	June 4,6
	3. Types of Polygon	2. Calculate the sum of interior angles of a polygon			✓	2	June 8-9
	4. Convex Polygon	3. Differentiate between convex and concave polygons		✓		1	June 10



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Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Summer Zone
			K	U	A		Timeline
		Students will be able to:					
	5. Properties of Convex Polygon	4. Calculate unknown angles in triangles and quadrilaterals		✓		2	June 11-12
	6. Sum of Measure of Exterior Angles of A polygon	5. Recognize quadrilateral and their characteristic.		✓		1	June 13
	7. Characteristics of Quadrilaterals	6. Describe the elements and properties of circle.				2	June 15-16
	8. Line of Symmetry in quadrilateral			✓			
	9. Circle, Radius, Cord and Diameter						
	10. Arc of a Circle						
	11. Minor and Major arcs						
10. Practical Geometry	1. Construction of Triangles	Student will be able to					
	2. Types of Triangle with respect to sides	1. Construct an equilateral triangle			✓	2	June 17-18
		2. Construct an isosceles and scalene triangles			✓	2	June 19-20



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			K	U	A		Timeline	
		Students will be able to:						
	3. Types of triangle with respect to angles	3. Construct acute angles, Obtuse angles			✓	2	June 22-23	
	4. Perpendicular distance of a point from a line.	4. Construct a right angles triangles.			✓	2	June 24,27	
		5. Know that perpendicular Distance of a point from a line is the shortest distance to the line		✓		1	June 29	
11.Mensuration	1. Circumference of a circle	Student will be able to						
	2. Units of Area							
	3. Area of a Circular Region	1. Find the circumference of a circle.		✓		1	June 30	
	4. Prisms	Summer Vacations						
	5. Surface Area of Rectangular Prism	43						July 1 to August 12
	6. Units of Volume	2. Find the area of a circular region.		✓		3	August 13,15,17	
	7. Volume of a Prism	3. Find the perimeter and the area of composite shapes		✓		4	August 18-21	
8. Area and Total Surface Area of Cylinder	4. Find the surface area and the volume of prisms			✓	4	August 27-29, 31		
9. Volume of a Cylinder								



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			K	U	A		Timeline	
		Students will be able to:						
		5. Find the Surface area and the volume of a circular cylinder			✓	5	Sep 1-5	
		6. Convert between standard units of area and volume			✓	5	Sep 7-11	
12.Data Handling	<ol style="list-style-type: none"> 1. Data Prostration 2. Collection of Data 3. Types of Data 4. Frequency Distribution 5. Mean, Median, Mode 6. Statistical Diagrams 7. Bar Graphs 	Student will be able to						
		1. Interpret data of various types.	✓			5	Sep 12, 14-17	
		2. Construct frequency distribution for the given data		✓		2	Sep 18-19	
		Sports Gala					6	Sep 21-26
		3. Find the mean, median and mode for ungroup data		✓		3	Sep 28-30	
	<ol style="list-style-type: none"> 8. Histogram for Ungrouped data 9. Histogram 	4. Construction of Pie graph, Bar graph and Histogram			✓	3	Oct 1-3	
13.Probability	<ol style="list-style-type: none"> 1. Probability 2. Probability of equally likely events 	Student will be able to				4	Oct 5-8	
		1. Recognize experiment, possible outcomes and sample space		✓		5	Oct 9-10, 12-14	



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			K	U	A		Timeline
		Students will be able to:					
	3. Complement of an Events 4. Tree Diagrams	SPORTS GALA				6	Oct 15-17, 19-21
		2. Recognize events, equally likely events, mutually exclusive events.		✓		6	Oct 22-24, 26-28
		3. Determine the complement of a event		✓		7	Oct 29-31, Nov 2-5
		4. Apply probability to the real life situations			✓	8	Nov 6-16
ANNUAL EXAMINATIONS						21	Nov 17- Dec 10
ASSESSMENT of ANSWER SCRIPTS						5	Dec 11-18
Result Day						1	Dec 19
Winter Camp						11	Dec 20-31



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Number of Student Learning Outcomes by Cognitive Levels

S#	Theme/Topic	No. of Sub-Topics	SLOs			Total SLOs
			K	U	A	
1	Rational Numbers	6	1	1	5	7
2	Squares and Square Roots	6	0	3	2	5
3	Ratio, Rate and Proportion	11	0	1	3	4
4	Financial Arithmetics	13	1	1	3	5
5	Sets	11	2	1	0	3
6	Algebra	8	0	3	2	5
7	Transformations	4	0	3	1	4
8	Linear Equations	11	1	1	4	6
9	Geometry	11	0	4	2	6
10	Practical Geometry	4	0	0	5	5
11	Mensuration	9	0	0	6	6



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S#	Theme/Topic	No. of Sub-Topics	SLOs			Total SLOs
			K	U	A	
12	Data Handling	9	1	2	1	4
13	Probability	4	0	3	1	4
Total		107	6	23	35	64



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Determining Marks/Weightage for a Specific Theme/Unit

Sr No	Theme/Unit	No of SLOs in the Unit	Weightage in % = No of SLOs in the Unit / Total No of SLOs of the Subject × 100	Weightage in Marks=Calculated Percentage in Previous Column*Total Marks /100
1	Rational Numbers	7	$7/64*100 = 11\%$	11
2	Squares and Square Roots	5	$5/64*100 = 8\%$	8
3	Ratio, Rate and Proportion	4	$4/64*100 = 6\%$	6
4	Financial Arithmetics	5	$5/64*100 = 8\%$	8
5	Sets	3	$3/64*100 = 5\%$	5
6	Algebra	5	$5/64*100 = 8\%$	8
7	Transformations	4	$4/64*100 = 6\%$	6
8	Linear Equations	6	$6/64*100 = 9\%$	9
9	Geometry	6	$6/64*100 = 9\%$	9
10	Practical Geometry	5	$5/64*100 = 8\%$	8
11	Mensuration	6	$6/64*100 = 9\%$	9
12	Data Handling	4	$4/64*100 = 6\%$	6



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13	Probability	4	$6/64 * 100 = 6\%$	6
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Note: The table mentioned above should be used to determine the weightage/marks of a specific theme/unit. However, subject experts should also consider the relevance and significance of the topic when finalizing the weightage/marks

Table of Specification for Annual Examination 2025

Sr. No	Theme/Topic	Marks Distribution			Total Marks
		MCQs	CRQs	ERQs	
1	Rational Numbers	2@1 mark=2	3@3 marks=9	1@7 marks=7	18
2	Squares and Square Roots	2@1 mark=2	2@3 marks=6	.....	08
3	Ratio, Rate and Proportion	1@1mark=1	2@3 marks=6	1@7 marks=7	07
4	Financial Arithmetics	2@1 mark=2	2@3 marks=6		08
5	Sets	.....	2@3 marks=6	1@7marks=7	13
6	Algebra	2@1 mark=2	2@3mark=6	1@7 marks=7	15
7	Transformations	1@1 mark=1	2@3 mark=6	07
8	Linear Equations	2@1 mark=2	3@3 mark=9	11
9	Geometry	2@1 mark=2	3@3 mark=9	11



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10	Practical Geometry	2@1 mark=2	2@3 mark=6	1@7 marks=7	15
11	Mensuration	2@1 mark=2	3@3 mark=9		11
12	Data Handling	1@1 mark=1	2@3 mark=6	.....	07
13	Probability	1@1 mark=1	2@3 mark=6	.....	07
Total		20x1=20	15x3=45	5x7=35	

Section-wise Marks Distribution (Including Choices)

S. No	Domain	Question Given	Questions to be Attempted	Marks/ Question	Total Marks including options	Total Marks Without options
1	MCQs (Section-A)	20	20	1	20	20
2	CRQs (Section-B)	30	15	3	90	45
3	ERQs (Section-C)	10	05	07	70	35
Total Marks					180	100



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Grade 7 – Extreme Winter Zone

Subject: Mathematics

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Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Winter Zone Timeline
			K	U	A		
		Students will be able to:					
1.Rational Number	<ol style="list-style-type: none"> 1. Place Value and the decimal Number system 2. Rounding to the nearest whole number and a specific of number of decimal places. 3. Integers, Rational Numbers 4. Representing Rational numbers on Number line 5. Operations on Rational Numbers 6. Order of Operations. 	1.Use the concept of place value for whole number, integer, rational number and decimal numbers			✓	2	April 1-2
		2.Round off whole numbers, integers, rational numbers and decimal number to a required number of accuracy, significance or decimal places			✓	2	April 3-4
		3.Recognize Integer	✓			1	April 6
		4.Identify and represent rational number on number line		✓		2	April 7-8
		5.Verify commutative and associative properties of rational numbers			✓	1	April 9
		6.Solve real word problem involving operations on rational numbers			✓	2	April 10-11
		7.Arrange rational number in ascending or descending order			✓	2	April 13-14



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Grade 7 – Extreme Winter Zone

Subject: Mathematics

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Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Winter Zone	
			K	U	A			
		Students will be able to:	K	U	A		Timeline	
2.Square and Square Roots	<ol style="list-style-type: none"> 1. Even number, Odd Numbers, 2. Composite Numbers 3. Perfect Square (Square of a Natural Number, proper fraction) 4. Square Root of a Natural Numbers and 	Students will be able to: 1.Recognize prime and composite number		✓		2	April 15-16	
		2.Find the square of a number up to three digits		✓		2	April 17-18	
3.Ratio, Rate, and Proportion	<ol style="list-style-type: none"> 1. Ratio 2. Ratio of three quantities 3. Increase and decrease ratio 4. Rate and Average Rate 5. Proportion 6. Direct Proportion 7. Unitary Method 8. Inverse Proportion 9. Distance, Time and Speed 10. Conversion of units of distance time and speed 11. Time 	Students will be able to:	K	U	A	Time line	Extreme Summer Zone	
		5.Solve word problems on square root			✓	2	April 20-21	
		Students will be able to:						
		1.Calculate increase and decrease in ration based on change in quantities and vice versa			✓	2	April 22-23	
		2.Calculate rate and average rate of quantities			✓	2	April 24,25	
		3.Calculate direct and inverse proportion		✓		2	April 27-28	



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			K	U	A		
		Students will be able to:					
		4.Solve word problem related to real life situations involving direct, inverse proportion, distance, time and average speed			✓	2	April 29-30
4.Financial Arithmetic	<ol style="list-style-type: none"> 1. Profit and loss 2. Importance of Profit and loss percentage 3. Discount 4. Property tax 5. General Sales Tax 6. Commission 7. Value Added Tax (VAT) 8. Zakat 9. Nisab of Zakat 10. Rate of Zakat 11. Ushr 12. Rate of Ushr 13. Income Tax 	1. Know about selling price, cost price, profit, loss, discount, profit percentage and loss percentage	✓			4	May 2,4-6
		2.Calculate property tax, general sales tax, commission and value added tax (VAT)		✓		4	May 7-9,11
		3.Solve real life problems involving profit and loss percentage, zakat, Ushr, and commission			✓	4	May 12-15
		4.Calculate Ushr and solve real life problem involving Ushr			✓	3	May 16.18-19
		5.Calculate Income tax and solve real life problem involving Income tax			✓	3	May 20-22



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			K	U	A		
		Students will be able to:					
5.Sets	1.Set and its Notation	1.Use language , notation and Venn Diagram to represent sets and their elements (Natural numbers, whole numbers, integers, even numbers, odd numbers, prime numbers	✓			3	May 23, 25-26, 30
		2.Identify and differentiate between <ul style="list-style-type: none"> • Subset and superset • proper and improper • equal and equivalent • disjoint and overlapping 	✓			4	June 1-4
		3.Describe and perform operations on sets (Union, intersection, difference and complement)			✓		4	June 5-6, 8-9
6.Algebra	1. Algebraic Expression 2. Terms of Algebraic Expression 3. Addition and subtraction of two or more polynomial 4. Multiplication of polynomials 5. Algebraic Identities 6. Factorization 7. Number pattern and sequences	Student will able to learn about					
		1.Algebraic Expression	✓			2	June 11-12



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			K	U	A		
		Students will be able to:					Timeline
	8. Number Tables and Finding Rules						
		2. Polynomial and its types	✓			2	June 13-14
		3. Operation on polynomials (Addition, Subtraction, and Multiplication)		✓		2	June 15-16
		4. Algebraic Identities $(x+ a) (x +b) = x^2 + (a+b) +ab$ $(a+b)^2 = a^2 +2ab+b^2$ $(a-b)^2 = a^2 + -2ab +b^2$ $(a+b) (a-b) = a^2-b^2$			✓	2	June 18-19
		5. Factorization of algebraic expression using algebraic identifies and making group			✓	6	June 20-23, 25-26
7.Transformation	1. Cartesian plane 2. Translation 3. Reflection and line of Symmetry 4. Rotation and Rotational symmetry	Student will able to					
		1. Understand and use Cartesian coordinates system	✓			3	June 27, 29-30



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			K	U	A		
		Students will be able to:					Timeline
		2. Use ordered pairs to points on coordinate plane		✓		4	July 1-4
		3. Identify coordinates of vertices of 2-D shapes		✓		2	July 6-7
		4. Translate points and 2-D shapes on coordinate plan			✓	3	July 8-10
8.Linear Equations	<ol style="list-style-type: none"> 1. Algebraic Equation 2. Linear Equation in one Variable 3. Solution of Linear Equation 4. Literal Equation 5. linear Equations in Two Variables 6. General Form of Linear Equation in Two variables 7. Graphing a linear Equation 8. Graph of an equation of the Form $y = mx$ (where m is slope of line) 9. Solving System of Linear Equation 10. Elimination Method 11. Substitution Method 	Student will able to					
		1. Recall the solution of linear equations in one variable	✓			2	July 11,13
		2. Form a linear equation in two variable		✓		2	July 14-15
		3. Solve simultaneous linear equation using elimination and substitution methods			✓	4	July 16-18,20
		4. Plot graphs of a linear equation in two variables			✓	2	July 21-22
		5. Recognize and state equation of horizontal and vertical lines			✓	3	July 23-25



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			K	U	A		
		Students will be able to:					Timeline
		6. Find the value of x and y from the graph		✓		2	July 27-28
9.Geometry	<ol style="list-style-type: none"> 1. Polygon 2. Sum of measures of Interior Angles of a Polygon 3. Types of Polygon 4. Convex Polygon 5. Properties of Convex Polygon 6. Sum of Measure of Exterior Angles of A polygon 7. Characteristics of Quadrilaterals 8. Line of Symmetry in quadrilateral 9. Circle, Radius, Cord and Diameter 10. Arc of a Circle 11. Minor and Major arcs 	Student will be able to					
		1. Calculate the interior and exterior angles of a polygon			✓	3	July 91-31
		2. Calculate the sum of interior angles of a polygon			✓	2	August 1-3
		3. Differentiate between convex and concave polygons		✓		1	August 4
		4. Calculate unknown angles in triangles and quadrilaterals		✓		1	August 5
		5. Recognize quadrilateral and their characteristic.		✓		3	August 6-8
		6. Describe the elements and properties of circle.		✓		5	August 10-12, 15-16
10.Practical Geometry	<ol style="list-style-type: none"> 1. Construction of Triangles 2. Types of Triangle with respect to sides 3. Types of triangle with respect to angles 	Student will be able to					
		1. Construct an equilateral			✓	4	August 17-20



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Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Winter Zone
			K	U	A		
		Students will be able to:					Timeline
	4. Perpendicular distance of a point from a line.	Term II				9	August 21-31
		2. Construct an isosceles and scalene triangles			✓	2	Sep 1-2
		3. Construct acute angles, Obtuse angles			✓	3	Sep 3-5
		4. Construct a right angles triangles.			✓	2	Sep 7-8
		5. Know that perpendicular Distance of a point from a line is the shortest distance to the line			✓	2	Sep 9-10
11.Mensuration	1. Circumference of a circle 2. Units of Area 3. Area of a Circular Region 4. Prisms 5. Surface Area of Rectangular Prism 6. Units of Volume 7. Volume of a Prism 8. Area and Total Surface Area of Cylinder	Student will be able to					
		1. Find the circumference of a circle.			✓	3	Sep 11-12,14
		2. Find the area of a circular region.			✓	3	Sep 15-17
		3. Find the perimeter and the area of composite shapes			✓	2	Sep 18-19



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Extreme Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Winter Zone
			K	U	A		
		Students will be able to:					Timeline
	9. Volume of a Cylinder	Sports Gala				6	Sep 21-26
		4. Find the surface area and the volume of prisms			✓	3	Sep 28-30
		5. Find the Surface area and the volume of a circular cylinder			✓	4	Oct 1-3,5
		6. Convert between standard units of area and volume			✓	4	Oct 6-9
12.Data Handling	1. Data Prostration 2. Collection of Data 3. Types of Data 4. Frequency Distribution 5. Mean, Median, Mode 6. Statistical Diagrams 7. Bar Graphs	Student will be able to					
		1. Interpret data of various types.	✓			4	Oct 10, 12-14
		2. Construct frequency distribution for the given data		✓		5	Oct 15-17, 19-20
		3. Find the mean, median and mode for ungroup data		✓		4	Oct 21-24
	8. Histogram for Ungrouped data 9. Histogram	4. Construction of Pie graph, Bar graph and Histogram			✓	3	Oct 26-28
13.Probability	1. Probability	Student will be able to					



Scheme of Studies and Centralized SLO Based Syllabus Break-Up



Grade 7 – Extreme Winter Zone

Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Winter Zone Timeline
			K	U	A		
		Students will be able to:					
	2. Probability of equally likely events 3. Complement of an Events 4. Tree Diagrams	1. Recognize experiment, possible outcomes and sample space		✓		3	Oct 29-31
		2. Recognize events, equally likely events, mutually exclusive events.		✓		3	Nov 2-5
		3. Determine the complement of a event		✓		4	Nov 6-7,10-11
		4. Apply probability to the real-life situations			✓	4	Nov 12-14,16
Annual Exam						21	Nov 17 to Dec 10
ASSESSMENT of ANSWER SCRIPTS						3	Dec 11-14
RESULT ANOUNCEMENT						1	Dec 15
Winter Camp						14	Dec 16-31



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Extreme Winter Zone



Subject: Mathematics

Class: 7

Number of Student Learning Outcomes by Cognitive Levels

S#	Theme/Topic	No. of Sub-Topics	SLOs			Total SLOs
			K	U	A	
1	Rational Numbers	6	1	1	5	7
2	Squares and Square Roots	6	0	3	2	5
3	Ratio,Rate and Proportion	11	0	1	3	4
4	Financial Arithmetics	13	1	1	3	5
5	Sets	11	2	1	0	3
6	Algebra	8	0	3	2	5
7	Transformations	4	0	3	1	4
8	Linear Equations	11	1	1	4	6
9	Geometry	11	0	4	2	6
10	Practical Geometry	4	0	0	5	5
11	Mensuration	9	0	0	6	6
12	Data Handling	9	1	2	1	4



Scheme of Studies and Centralized SLO Based Syllabus Break-Up



Grade 7 – Extreme Winter Zone

Subject: Mathematics

Class: 7

S#	Theme/Topic	No. of Sub-Topics	SLOs			Total SLOs
			K	U	A	
13	Probability	4	0	3	1	4
Total		107	6	23	35	64



Scheme of Studies and Centralized SLO Based Syllabus Break-Up



Grade 7 – Extreme Winter Zone

Subject: Mathematics

Class: 7

Determining Marks/Weightage for a Specific Theme/Unit

Sr No	Theme/Unit	No of SLOs in the Unit	Weightage in % = No of SLOs in the Unit / Total No of SLOs of the Subject × 100	Weightage in Marks=Calculated Percentage in Previous Column*Total Marks /100
1	Rational Numbers	7	$7/64*100 = 11\%$	11
2	Squares and Square Roots	5	$5/64*100 = 8\%$	8
3	Ratio,Rate and Proportion	4	$4/64*100 = 6\%$	6
4	Financial Arithmetics	5	$5/64*100 = 8\%$	8
5	Sets	3	$3/64*100 = 5\%$	5
6	Algebra	5	$5/64*100 = 8\%$	8
7	Transformations	4	$4/64*100 = 6\%$	6
8	Linear Equations	6	$6/64*100 = 9\%$	9
9	Geometry	6	$6/64*100 = 9\%$	9
10	Practical Geometry	5	$5/64*100 = 8\%$	8
11	Mensuraton	6	$6/64*100 = 9\%$	9



Scheme of Studies and Centralized SLO Based Syllabus Break-Up



Grade 7 – Extreme Winter Zone

Subject: Mathematics

Class: 7

12	Data Handling	4	$4/64 * 100 = 6\%$	6
13	Probability	4	$6/64 * 100 = 6\%$	6



Scheme of Studies and Centralized SLO Based Syllabus Break-Up



Grade 7 – Extreme Winter Zone

Subject: Mathematics

Class: 7

Table of Specification for Annual Examination 2025

Sr. No	Theme/Topic	Marks Distribution			Total Marks
		MCQs	CRQs	ERQs	
1	Rational Numbers	2x1 mark=2	3@3 marks=9	1@7 marks=7	18
2	Squares and Square Roots	2x1 mark=2	2@3 marks=6	1@7 marks=7	15
3	Ratio,Rate and Proportion	1x1mark=1	2@3 marks=6	1@7 marks=7	14
4	Financial Arithmetics	2x1 mark=2	2@3 marks=6	1@7 marks=7	15
5	Sets	.....	2@3 marks=6	1@7marks=7	13
6	Algebra	2x1 mark=2	2@3mark=6	2@7 marks=14	22
7	Transformations	1x1 mark=1	2@3 mark=6	.....	07
8	Linear Equations	2x1 mark=2	3@3 mark=9	.....	11
9	Geometry	2x1 mark=2	3@3 mark=9	.....	11
10	Practical Geometry	2x1 mark=2	2@3 mark=6	2@7 marks=14	22
11	Mensuraton	2x1 mark=2	3@3 mark=9	1@7 marks=7	18
12	Data Handling	1x1 mark=1	2@3 mark=6	.....	07



Scheme of Studies and Centralized SLO Based Syllabus Break-Up



Grade 7 – Extreme Winter Zone

Subject: Mathematics

Class: 7

13	Probability	1x1 mark=1	2@3 mark=6	.....	07
Total		20x1=20	30x3=90	10x7=70	180



Scheme of Studies and Centralized SLO Based Syllabus Break-Up
Grade 7 – Extreme Winter Zone



Subject: Mathematics

Class: 7

Section-wise Marks Distribution (Including Choices)

S. No	Domain	Question Given	Questions to be Attempted	Marks/ Question	Total Marks including options	Total Marks Without options
1	MCQs (Section-A)	20	20	1	20	20
2	CRQs (Section-B)	30	15	3	90	45
3	ERQs (Section-C)	10	05	07	70	35
Total Marks					180	100



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
		Students will be able to:					Timeline
1.Rational Number	<ol style="list-style-type: none"> 1. Place Value and the decimal Number system 2. Rounding to the nearest whole number and a specific of number of decimal places. 3. Integers, Rational Numbers 4. Representing Rational numbers on Number line 5. Operations on Rational Numbers 6. Order of Operations. 	1.Use the concept of place value for whole number, integer, rational number and decimal numbers			✓	2	March 2-3
		2.Round off whole numbers, integers, rational numbers and decimal number to a required number of accuracy, significance or decimal places			✓	2	March 4-5
		3.Recognize Integer	✓			1	March 6
		4.Identify and represent rational number on number line		✓		2	March 7,9
		5.Verify commutative and associative properties of rational			✓	1	March 10



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
Students will be able to:			K	U	A	Timeline	
		numbers					
		6.Solve real word problem involving operations on rational numbers			✓	2	March 11-12
		7.Arrange rational number in ascending or descending order			✓	2	March 13-14
2.Square and Square Roots	1. Even number, Odd Numbers, 2. Composite Numbers 3. Perfect Square (Square of a Natural Number, proper fraction) 4. Square Root of a Natural Numbers and	Students will be able to: 1.Recognize prime and composite number		✓		2	March 16-17
		2.Find the square of a number up to three digits		✓		2	March 18-19
Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Duration in Days	



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		Timeline
		Students will be able to:					Winter Zone
						2	March 20,24
		5.Solve word problems on square root			✓	2	March 25-26
3.Ratio, Rate, and Proportion	<ol style="list-style-type: none"> 1. Ratio 2. Ratio of three quantities 3. Increase and decrease ratio 4. Rate and Average Rate 5. Proportion 6. Direct Proportion 7. Unitary Method 8. Inverse Proportion 9. Distance, Time and Speed 10. Conversion of units of distance time and speed 11. Time 	Students will be able to:					
		1.Calculate increase and decrease in ration based on change in quantities and vice versa			✓	2	March 27-28
		2.Calculate rate and average rate of quantities			✓	2	March 30-31
		3.Calculate direct and inverse proportion		✓		2	April 1-2



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
Students will be able to:			K	U	A		Timeline
		4.Solve word problem related to real life situations involving direct, inverse proportion, distance, time and average speed			✓	2	April 3-4
4.Financial Arithmetic	<ol style="list-style-type: none"> 1. Profit and loss 2. Importance of Profit and loss percentage 3. Discount 4. Property tax 5. General Sales Tax 6. Commission 7. Value Added Tax (VAT) 8. Zakat 9. Nisab of Zakat 10. Rate of Zakat 11. Ushr 	1. Know about selling price, cost price, profit, loss, discount, profit percentage and loss percentage	✓			4	April 6-9
		2.Calculate property tax, general sales tax, commission and value added tax (VAT)		✓		2	April 10-11
		3.Solve real life problems involving profit and loss percentage, zakat, Ushr, and commission			✓	2	April 13-14



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
Students will be able to:			K	U	A		Timeline
	12. Rate of Ushr 13. Income Tax	4. Calculate Ushr and solve real life problem involving Ushr			✓	2	April 15-16
		5. Calculate Income tax and solve real life problem involving Income tax			✓	2	April 17-18
5.Sets	1. Set and its Notation	1. Use language , notation and Venn Diagram to represent sets and their	✓			2	April 20-21
	2. Set notation to list the Elements of a Set 3. Types of Sets 4. Subset and Superset	elements (Natural numbers, whole numbers, integers, even numbers, odd numbers, prime numbers				2	April 22-23



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
Students will be able to:			K	U	A		Timeline
	5. Proper and improper sets 6. Equal and Equivalent sets 7. Joint and overlapping sets 8. Operations on sets 9. Union and Intersection 10. Difference of two sets 11. Complement of a set	2. Identify and differentiate between <ul style="list-style-type: none"> • Subset and superset • proper and improper • equal and equivalent • disjoint and overlapping 	✓			4	April 24-25,27-28
		3. Describe and perform operations on sets (Union, intersection, difference and complement)		✓		2	April 29-30
6. Algebra	1. Algebraic Expression 2. Terms of Algebraic Expression 3. Addition and subtraction of two or more polynomial 4. Multiplication of polynomials 5. Algebraic Identities 6. Factorization 7. Number pattern and sequences 8. Number Tables and Finding Rules	Student will able to learn about					
		1. Algebraic Expression	✓			3	May 2,4-5
		2. Polynomial and its types	✓			2	May 6-7
		3. Operation on polynomials (Addition, Subtraction, and		✓		5	May 8-9,11-13



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		Timeline
		Multiplication)					
		4. Algebraic Identities $(x+ a) (x +b) = x^2 + (a+b) +ab$ $(a+b)^2 = a^2 +2ab+b^2$ $(a-b)^2 = a^2 + -2ab +b^2$ $(a+b) (a-b) = a^2-b^2$			✓	4	May 14-16,18
		5. Factorization of algebraic expression using algebraic identifies and making group			✓	5	May 18-22
7.Transformation	<ol style="list-style-type: none"> 1. Cartesian plane 2. Translation 3. Reflection and line of Symmetry 4. Rotation and Rotational symmetry 	Student will able to					
		1. Understand and use Cartesian coordinates system	✓			3	May 23,25-26



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
Students will be able to:			K	U	A		Timeline
		2. Use ordered pairs to points on coordinate plane		✓		3	May 30, June 1-2
		3. Identify coordinates of vertices of 2-D shapes		✓		3	June 3-6
		4. Translate points and 2-D shapes on coordinate plan			✓	4	June 8-11
8.Linear Equations	<ol style="list-style-type: none"> 1. Algebraic Equation 2. Linear Equation in one Variable 3. Solution of Linear Equation 4. Literal Equation 5. linear Equations in Two Variables 6. General Form of Linear Equation in Two variables 7. Graphing a linear Equation 	Student will able to					
		1. Recall the solution of linear equations in one variable	✓			3	June 12-13,15
		2. Form a linear equation in two variable		✓		3	June 16-18



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
Students will be able to:			K	U	A		Timeline
	8. Graph of an equation of the Form $y = mx$ (where m is slope of line)	3. Solve simultaneous linear equation using elimination and substitution methods			✓	4	June 19-20, 22-23
	9. Solving System of Linear Equation 10. Elimination Method 11. Substitution Method	4. Plot graphs of a linear equation in two variables			✓	2	June 24, 27
		5. Recognize and state equation of horizontal and vertical lines			✓	2	June 29-30
		6. Find the value of x and y from the graph		✓		2	July 1-2
9.Geometry	1. Polygon 2. Sum of measures of Interior Angles of a Polygon 3. Types of Polygon	Student will be able to					
		1. Calculate the interior and exterior angles of a polygon			✓	2	July 3-4



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
Students will be able to:			K	U	A		Timeline
	4. Convex Polygon 5. Properties of Convex Polygon 6. Sum of Measure of Exterior Angles of A polygon 7. Characteristics of Quadrilaterals 8. Line of Symmetry in quadrilateral 9. Circle, Radius, Cord and Diameter 10. Arc of a Circle 11. Minor and Major arcs	2. Calculate the sum of interior angles of a polygon			✓	2	July 6-7
		3. Differentiate between convex and concave polygons		✓		1	July 8
		4. Calculate unknown angles in triangles and quadrilaterals		✓		1	July 9
		5. Recognize quadrilateral and their characteristic.		✓		3	July 10-11,13
		6. Describe the elements and properties of circle.		✓		2	July 14-15
10. Practical Geometry	1. Construction of Triangles 2. Types of Triangle with respect to sides	Student will be able to					
		1. Construct an equilateral triangle			✓	2	July 16-17



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone	
			K	U	A			
Students will be able to:			K	U	A		Timeline	
	3. Types of triangle with respect to angles 4. Perpendicular distance of a point from a line.	2. Construct an isosceles and scalene triangles			✓	2	July 18,20	
		Summer Vacations					20	July 21- August 9
		3. Construct acute angles, Obtuse angles			✓	1	August 10	
		4. Construct a right angles triangles.			✓	2	August 11-12	
		5. Know that perpendicular Distance of a point from a line is the shortest distance to the line			✓	2	August 13,15	
11.Mensuration	1. Circumference of a circle	Student will be able to						



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
Students will be able to:			K	U	A		Timeline
	2. Units of Area 3. Area of a Circular Region 4. Prisms 5. Surface Area of Rectangular Prism 6. Units of Volume 7. Volume of a Prism 8. Area and Total Surface Area of Cylinder 9. Volume of a Cylinder	1. Find the circumference of a circle.			✓	2	August 17-18
		2. Find the area of a circular region.			✓	2	August 19-20
		3. Find the perimeter and the area of composite shapes			✓	3	August 21-22,24
		4. Find the surface area and the volume of prisms			✓	4	August 25-28
		5. Find the Surface area and the volume of a circular cylinder			✓	5	August 29,31, Sep 1-3
		6. Convert between standard units of area and volume			✓	5	Sep 4-5,7-9
12.Data Handling	1. Data Prostration 2. Collection of Data 3. Types of Data 4. Frequency Distribution	Student will be able to					
		1. Interpret data of various types.	✓			4	Sep 10-12,14



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone	
			K	U	A			
Students will be able to:			K	U	A		Timeline	
	5. Mean, Median, Mode 6. Statistical Diagrams 7. Bar Graphs	2. Construct frequency distribution for the given data		✓		5	Sep 15-19	
		Sports Gala				6	Sept 21-26	
		3. Find the mean, median and mode for ungroup data		✓		6	Oct 28-30, Oct 1-3	
	8. Histogram for Ungrouped data 9. Histogram	4. Construction of Pie graph, Bar graph and Histogram			✓	6	Oct 5-10	
13.Probability	1. Probability 2. Probability of equally likely events	Student will be able to						
	3. Complement of an Events 4. Tree Diagrams	1. Recognize experiment, possible outcomes and sample space		✓		6	Oct 12-17	
		2. Recognize events, equally likely events, mutually exclusive events.		✓		6	Oct 19-24	



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Winter Zone
			K	U	A		
Students will be able to:			K	U	A		Timeline
		3. Determine the complement of a event		✓		8	Oct 26-31, Nov 2-3
		4. Apply probability to the real life situations			✓	5	Nov 4-7,9
REVISION						6	Nov 10-14,16
ANNUAL EXAMINATIONS						21	Nov 17 to Dec 10
ASSESSMENT of ANSWER SCRIPTS						8	Dec 11-18
RESULT ANOUNCEMENT						1	Dec 19
Winter Vacations						70	Dec 21 to Feb.28



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Number of Student Learning Outcomes by Cognitive Levels

S#	Theme/Topic	No. of Sub-Topics	SLOs			Total SLOs
			K	U	A	
1	Rational Numbers	6	1	1	5	7
2	Squares and Square Roots	6	0	3	2	5
3	Ratio,Rate and Proportion	11	0	1	3	4
4	Financial Arithmetics	13	1	1	3	5
5	Sets	11	2	1	0	3
6	Algebra	8	0	3	2	5
7	Transformations	4	0	3	1	4



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

S#	Theme/Topic	No. of Sub-Topics	SLOs			Total SLOs
			K	U	A	
8	Linear Equations	11	1	1	4	6
9	Geometry	11	0	4	2	6
10	Practical Geometry	4	0	0	5	5
11	Mensuration	9	0	0	6	6
12	Data Handling	9	1	2	1	4
13	Probability	4	0	3	1	4
Total		107	6	23	35	64



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Determining Marks/Weightage for a Specific Theme/Unit

Sr No	Theme/Unit	No of SLOs in the Unit	Weightage in % = No of SLOs in the Unit / Total No of SLOs of the Subject $\times 100$	Weightage in Marks=Calculated Percentage in Previous Column*Total Marks /100
1	Rational Numbers	7	$7/64*100 = 11\%$	11
2	Squares and Square Roots	5	$5/64*100 = 8\%$	8
3	Ratio,Rate and Proportion	4	$4/64*100 = 6\%$	6
4	Financial Arithmetics	5	$5/64*100 = 8\%$	8
5	Sets	3	$3/64*100 = 5\%$	5
6	Algebra	5	$5/64*100 = 8\%$	8
7	Transformations	4	$4/64*100 = 6\%$	6
8	Linear Equations	6	$6/64*100 = 9\%$	9
9	Geometry	6	$6/64*100 = 9\%$	9
10	Practical Geometry	5	$5/64*100 = 8\%$	8



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

11	Mensuraton	6	$6/64 * 100 = 9\%$	9
12	Data Handling	4	$4/64 * 100 = 6\%$	6
13	Probability	4	$6/64 * 100 = 6\%$	6

Table of Specification for Annual Examination 2025

Sr. No	Theme/Topic	Marks Distribution			Total Marks
		MCQs	CRQs	ERQs	
1	Rational Numbers	2x1 mark=2	3@3 marks=9	1@7 marks=7	18
2	Squares and Square Roots	2x1 mark=2	2@3 marks=6	1@7 marks=7	15
3	Ratio,Rate and Proportion	1x1mark=1	2@3 marks=6	1@7 marks=7	14
4	Financial Arithmetics	2x1 mark=2	2@3 marks=6	1@7 marks=7	15
5	Sets	.....	2@3 marks=6	1@7marks=7	13
6	Algebra	2x1 mark=2	2@3mark=6	2@7 marks=14	22
7	Transformations	1x1 mark=1	2@3 mark=6	.....	07



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

8	Linear Equations	2x1 mark=2	3@3 mark=9	.....	11
9	Geometry	2x1 mark=2	3@3 mark=9	.....	11
10	Practical Geometry	2x1 mark=2	2@3 mark=6	2@7 marks=14	22
11	Mensuraton	2x1 mark=2	3@3 mark=9	1@7 marks=7	18
12	Data Handling	1x1 mark=1	2@3 mark=6	.....	07
13	Probability	1x1 mark=1	2@3 mark=6	.....	07
Total		20x1=20	30x3=90	10x7=70	180

Section-wise Marks Distribution (Including Choices)

S. No	Domain	Question Given	Questions to be Attempted	Marks/ Question	Total Marks including options	Total Marks Without options
1	MCQs (Section-A)	20	20	1	20	20
2	CRQs (Section-B)	30	15	3	90	45
3	ERQs (Section-C)	10	05	07	70	35



Scheme of Studies and Centralized SLO Based Syllabus Break-Up

Grade 7 – Winter Zone



Subject: Mathematics

Class: 7

Total Marks	180	100
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Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade-7 Extreme Summer Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone	
		Students will be able to:	K	U	A		Timeline	
1. Rational Number	1. Place Value and the decimal Number system	1. Use the concept of place value for whole number, integer, rational number and decimal numbers			✓	2	Jan 5-6	
	2. Rounding to the nearest whole number and a specific of number of decimal places.	2. Round off whole numbers, integers, rational numbers and decimal number to a required number of accuracy, significance or decimal places			✓	2	Jan 7-8	
	3. Integers, Rational Numbers	3. Recognize Integers	✓			1	Jan 9	
	4. Representing Rational numbers on Number line	4. Identify and represent rational number on number line		✓		2	Jan 10,12	
	5. Operations on Rational Numbers	5. Verify commutative and associative properties of rational numbers			✓	1	Jan 13	
	6. Order of Operations.	6. Solve real word problem involving operations on rational numbers				✓	2	Jan 14-15
			7. Arrange rational number in ascending or descending order			✓	2	Jan 16-17
2. Square and Square Roots	1. Even number, Odd Numbers, 2. Composite Numbers	Students will be able to: 1. Recognize prime and composite number		✓		2	Jan 19-20	



Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade-7 Extreme Summer Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
			Students will be able to:	K	U		A	Timeline
	3. Perfect Square (Square of a Natural Number, proper fraction) 2 4. Square Root of a Natural Numbers and	2. Find the square of a number up to three digits		✓		2	Jan 21-22
	common fractions 5. Square Root by factorization 6. Square Root of Decimal Fractions by factorization	3. Find the square of a proper fractions and decimal.		✓		2	Jan 23-24
		4. Find the square root of natural numbers , common fractions and decimal fractions by factorization			✓	2	Jan 26-27
		5. Solve word problems on square root			✓	2	Jan 28-29
3. Ratio, Rate, and Proportion	1. Ratio 2. Ratio of three quantities 3. Increase and decrease ratio 4. Rate and Average Rate 5. Proportion 6. Direct Proportion 7. Unitary Method 8. Inverse Proportion	Students will be able to:					
		1. Calculate increase and decrease in ratio based on change in quantities and vice versa			✓	2	Jan 30-31
		2. Calculate rate and average rate of quantities			✓	2	February 2-3
		3. Calculate direct and inverse proportion		✓		2	February 6-7



Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade-7 Extreme Summer Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
		Students will be able to:	K	U	A		Timeline
	9. Distance, Time and Speed 10. Conversion of units of distance time and speed 11. Time	4. Solve word problem related to real life situations involving direct, inverse proportion, distance, time and average speed			✓	2	February 9-10
4. Financial Arithmetic	1. Profit and loss 2. Importance of Profit and loss percentage 3. Discount	1. Know about selling price, cost price, profit, loss, discount, profit percentage and loss percentage	✓			2	February 11-12
	4. Property tax 5. General Sales Tax 6. Commission	2. Calculate property tax, general sales tax, commission and value added tax (VAT)		✓		2	February 13-14
	7. Value Added Tax (VAT) 8. Zakat	3. Calculate Ushr and Zakat			✓	2	February 16-17
	9. Nisab of Zakat 10. Rate of Zakat 11. Ushr 12. Rate of Ushr	4. Solve real life problems involving profit and loss percentage, zakat, Ushr, and commission			✓	2	February 18-19
	13. Income Tax	5. Calculate Income tax and solve real life problem involving Income tax			✓	2	February 20-21
		1. Set and its Notation	1. Use language, notation and Venn Diagram to represent sets and their elements	✓			2	February 23-24



Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade-7 Extreme Summer Zone



Subject: Mathematics

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Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
			Students will be able to:	K	U		A	Timeline
	2. Set notation to list the Elements of a Set	2.Natural numbers, whole numbers, integers, even numbers, odd numbers, prime numbers	✓			2	February 25-26
	3. Types of Sets	3. Identify and differentiate between <ul style="list-style-type: none"> • Subset and superset • proper and improper • equal and equivalent • disjoint and overlapping 		✓		2	February 27-28
	4. Subset and Superset			✓		2	March 2-3
	5. Proper and improper sets	3. Describe and perform operations on sets (Union, intersection, difference and complement)		✓		2	March 2-3
	6. Equal and Equivalent sets			✓		2	March 2-3
	7. Joint and overlapping sets			✓		2	March 2-3
	8. Operations on sets			✓		2	March 2-3
	9. Union and Intersection			✓		2	March 2-3
	10. Difference of two sets			✓		2	March 2-3
	11. Complement of a set			✓		2	March 2-3
6. Algebra	1. Algebraic Expression	Student will able to learn about					
	2. Terms of Algebraic Expression	1.Algebraic Expression	✓			2	March 4-5
	3. Addition and subtraction of two or more polynomial	2. Polynomial and its types	✓			2	March 6-7
	4. Multiplication of polynomials	3. Operation on polynomials (Addition, Subtraction, and Multiplication)		✓		4	March 9-12
	5. Algebraic Identities			✓		4	March 9-12



Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade-7 Extreme Summer Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
		Students will be able to:	K	U	A		Timeline
6. Factorization 7. Number pattern and sequences 8. Number Tables and Finding Rules		4. Algebraic Identities $(x+ a) (x +b) = x^2 + (a+b) +ab$ $(a+b)^2 = a^2 +2ab+b^2$ $(a-b)^2 = a^2 + -2ab +b^2$ $(a+b) (a-b) = a^2-b^2$			✓	4	March 13-16
		5. Factorization of algebraic expression using algebraic identifies and making group			✓	4	March 17-20
		7. Transformation	1. Cartesian plane 2. Translation 3. Reflection and line of Symmetry 4. Rotation and Rotational symmetry	Student will able to			
		1. Understand and use Cartesian coordinates system	✓			5	March 24-28
		2. Use ordered pairs to points on coordinate plane		✓		3	March 30-31, April 1
		3. Identify coordinates of vertices of 2-D shapes		✓		3	April 2-4
		4. Translate points and 2-D shapes on coordinate plan			✓	2	April 6-7
8. Linear Equations	1. Algebraic Equation 2. Linear Equation in one Variable	Student will able to					
		1. Recall the solution of linear equations in one variable	✓			1	April 8-9



Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade-7 Extreme Summer Zone



Subject: Mathematics

Class: 7

Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
		Students will be able to:	K	U	A		Timeline
	3. Solution of Linear Equation	2. Form a linear equation in two variable		✓		2	April 10-11
	4. Literal Equation	3. Solve simultaneous linear equation using elimination and substitution methods			✓	2	April 13-14
	5. linear Equations in Two Variables	4. Plot graphs of a linear equation in two variables			✓	2	April 15-16
	6. General Form of Linear Equation in Two variables	5. Recognize and state equation of horizontal and vertical lines			✓	2	April 17-18
	7. Graphing a linear Equation	6. Find the value of x and y from the graph		✓		2	April 20-21
	8. Graph of an equation of the Form $y = mx$ (where m is slope of line)	Student will be able to					
	9. Solving System of Linear Equation	1. Calculate the interior and exterior angles of a polygon			✓	2	April 22-23
10. Elimination Method	2. Calculate the sum of interior angles of a polygon			✓	2	April 24-25	
11. Substitution Method	3. Differentiate between convex and concave polygons		✓		2	April 27-28	



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Subject: Mathematics

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Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
		Students will be able to:	K	U	A		Timeline
	6. Sum of Measure of Exterior Angles of A polygon	4. Calculate unknown angles in triangles and quadrilaterals		✓		2	April 29-30
	7. Characteristics of Quadrilaterals	5. Recognize quadrilateral and their characteristic.		✓		1	April 31
	8. Line of Symmetry in quadrilateral	6. Describe the elements and properties of circle.		✓		2	May 2,4
	9. Circle, Radius, Cord and Diameter						
	10. Arc of a Circle						
11. Minor and Major arcs							
10. Practical Geometry	1. Construction of Triangles	Student will be able to					
	2. Types of Triangle with respect to sides	1. Construct an equilateral			✓	2	May 5-6
	3. Types of triangle with respect to angles	2. Construct an isosceles and scalene triangles			✓	2	May 7-8
	4. Perpendicular distance of a point from a line.	3. Construct acute angles, Obtuse angles			✓	2	May 9,11
		4. Construct a right angles triangles.			✓	3	May 12-14



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Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
			Students will be able to:	K	U			A	Timeline
		5. Know that perpendicular distance of a point from a line is the shortest distance to the line			✓	2	May 15-16
11. Mensuration	1. Circumference of a circle 2. Units of Area 3. Area of a Circular Region 4. Prisms 5. Surface Area of Rectangular Prism 6. Units of Volume 7. Volume of a Prism 8. Area and Total Surface Area of Cylinder 9. Volume of a Cylinder	Student will be able to					
		1. Find the circumference of a circle.		✓		3	May 18-20
		2. Find the area of a circular region.		✓		3	May 21-23
		3. Find the perimeter and the area of composite shapes		✓		4	May 25-26,30, June 1
		4. Find the surface area and the volume of prisms			✓	4	June 2-5
		5. Find the Surface area and the volume of a circular cylinder			✓	5	June 6, 8-10
		6. Convert between standard units of area and volume			✓	5	June 11-14,15-17
SUMMER VACATIONS						75	June 18-August 31
12. Data	1. Data Prostration	Student will be able to					



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Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
		Students will be able to:	K	U	A		Timeline
Handling	2. Collection of Data	1. Interpret data of various types.	✓			6	Sep 1-5,7
	3. Types of Data	2. Construct frequency distribution for the given data		✓		6	Sep 8-12,14
	4. Frequency Distribution	3. Find the mean, median and mode for ungroup data		✓		5	Sep 15-19
	5. Mean, Median, Mode						
	6. Statistical Diagrams						
	7. Bar Graphs						
	Sports Gala					6	Sep 21-26
	8. Histogram for Ungrouped data	4. Construction of Pie graph, Bar graph and Histogram			✓	7	Sep 28-30, Oct 1-3,5
	9. Histogram						
13. Probability	1. Probability	Student will be able to					
	2. Probability of equally likely events	1. Recognize experiment, possible outcomes and sample space		✓		7	Oct 6 -10, 12-13
	3. Complement of an Events	2. Recognize events, equally likely events, mutually exclusive events.		✓		7	Oct 14-17, 19-21
	4. Tree Diagrams	3. Determine the complement of an event		✓		6	Oct 22-24, 26-28
		4. Apply probability to the real-life situations			✓	6	Oct 29-31, Nov 2-4



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Unit/ Theme	Name of Sub Topic(s)	Students Learning Outcomes	Cognitive Levels			Days	Extreme Summer Zone
		Students will be able to:	K	U	A		Timeline
REVISION						12	Nov 5-7,10-14,16
ANNUAL EXAMINATIONS						21	Nov 17-30 ,Dec 1-10
ASSESSMENT of ANSWER SCRIPTS						08	Dec 11-18
RESULTS						1	Dec 19
In House Training						10	Dec 21-31



Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade-7 Extreme Summer Zone



Subject: Mathematics

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Number of Student Learning Outcomes by Cognitive Levels

S#	Theme/Topic	No. of Sub-Topics	SLOs			Total SLOs
			K	U	A	
1	Rational Numbers	6	1	1	5	7
2	Squares and Square Roots	6	0	3	2	5
3	Ratio,Rate and Proportion	11	0	1	3	4
4	Financial Arithmetics	13	1	1	3	5
5	Sets	11	2	1	0	3
6	Algebra	8	0	3	2	5
7	Transformations	4	0	3	1	4
8	Linear Equations	11	1	1	4	6
9	Geometry	11	0	4	2	6
10	Practical Geometry	4	0	0	5	5
11	Mensuraton	9	0	0	6	6
12	Data Handling	9	1	2	1	4



**Scheme of Studies and Centralized SLO Based Syllabus Break-Up
Grade-7 Extreme Summer Zone**



Subject: Mathematics

Class: 7

S#	Theme/Topic	No. of Sub-Topics	SLOs			Total SLOs
			K	U	A	
13	Probability	4	0	3	1	4
Total		107	6	23	35	64



Scheme of Studies and Centralized SLO Based Syllabus Break-Up Grade-7 Extreme Summer Zone



Subject: Mathematics

Class: 7

Determining Marks/Weightage for a Specific Theme/Unit

Sr No	Theme/Unit	No of SLOs in the Unit	Weightage in % = No of SLOs in the Unit / Total No of SLOs of the Subject × 100	Weightage in Marks=Calculated Percentage in Previous Column*Total Marks /100
1	Rational Numbers	7	$7/64*100 = 11\%$	11
2	Squares and Square Roots	5	$5/64*100 = 8\%$	8
3	Ratio,Rate and Proportion	4	$4/64*100 = 6\%$	6
4	Financial Arithmetics	5	$5/64*100 = 8\%$	8
5	Sets	3	$3/64*100 = 5\%$	5
6	Algebra	5	$5/64*100 = 8\%$	8
7	Transformations	4	$4/64*100 = 6\%$	6
8	Linear Equations	6	$6/64*100 = 9\%$	9
9	Geometry	6	$6/64*100 = 9\%$	9
10	Practical Geometry	5	$5/64*100 = 8\%$	8
11	Mensuraton	6	$6/64*100 = 9\%$	9
12	Data Handling	4	$4/64*100 = 6\%$	6
13	Probability	4	$6/64*100 = 6\%$	6



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Subject: Mathematics

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Note: The table mentioned above should be used to determine the weightage/marks of a specific theme/unit. However, subject experts should also consider the relevance and significance of the topic when finalizing the weightage/marks

Table of Specification for Annual Examination 2025

Sr. No	Theme/Topic	Marks Distribution			Total Marks
		MCQs	CRQs	ERQs	
1	Rational Numbers	2@1 mark=2	3@3 marks=9	1@7 marks=7	18
2	Squares and Square Roots	2@1 mark=2	2@3 marks=6	.....	08
3	Ratio,Rate and Proportion	1@1mark=1	2@3 marks=6	1@7 marks=7	07
4	Financial Arithmetics	2@1 mark=2	2@3 marks=6		08
5	Sets	.....	2@3 marks=6	1@7marks=7	13
6	Algebra	2@1 mark=2	2@3mark=6	1@7 marks=7	15
7	Transformations	1@1 mark=1	2@3 mark=6	.....	07
8	Linear Equations	2@1 mark=2	3@3 mark=9	.....	11
9	Geometry	2@1 mark=2	3@3 mark=9	.....	11
10	Practical Geometry	2@1 mark=2	2@3 mark=6	1@7 marks=7	15
11	Mensuraton	2@1 mark=2	3@3 mark=9		11



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12	Data Handling	1@1 mark=1	2@3 mark=6	07
13	Probability	1@1 mark=1	2@3 mark=6	07
Total		20x1=20	15x3=45	5x7=35	



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Section-wise Marks Distribution (Including Choices)

S. No	Domain	Question Given	Questions to be Attempted	Marks/ Question	Total Marks including options	Total Marks Without options
1	MCQs (Section-A)	20	20	1	20	20
2	CRQs (Section-B)	30	15	3	90	45
3	ERQs (Section-C)	10	05	07	70	35
Total Marks					180	100